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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,853	01/10/2005	Holger Thiebert	THIELERT -3 PCT	2683
25889	7590	05/27/2009		
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			EXAMINER MERKLING, MATTHEW J	
			ART UNIT	PAPER NUMBER
			1795	
			MAIL DATE	DELIVERY MODE
			05/27/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,853	Applicant(s) THIELERT, HOLGER	
	Examiner MATTHEW J. MERKLING	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/5/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/26/09 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luinstra (GB 2221853 A) in view of Bartz et al. (US 5,494,003) and Crothers (US 5,169,604).

Regarding claim 1, Luinstra discloses a fission reactor for a Claus plant (see abstract), comprising a boiler (1) lined with refractory material (page 4 lines 32-33), which comprises a combustion chamber (15) having an inflow opening (3) for a mixture of heating gas, air and acid gas containing H₂S, a catalyst chamber (13) having a catalyst bed (13), and an outflow-side chamber (7) having a gas outlet (7) for hot process gas containing elemental sulfur, wherein the boiler (1) is configured as a horizontal cylindrical boiler (see Fig. 1), in which the combustion chamber (15), the catalyst chamber (13), and the outflow-side chamber (7) are disposed next to one another (see Fig. 1).

Luinstra teaches a catalyst chamber which is delimited on both sides, in the flow direction, by two wire screens (page 5, lines 16-18) which is in high temperature service, but fails to teach the catalyst chamber is delimited, on both sides, in the flow direction, by gas-permeable checker bricks containing elongated holes.

Bartz also discloses utilizing screens in high temperature service (col. 1 lines 29-33).

Bartz teaches using a perforated ceramic plate/checkered brick in place of a screen when used in high temperature service in order to improve durability and prevent the problems associated with screens in high temperature service such as warping (col. 2 lines 2-8).

As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the screens of Luinstra with the perforated ceramic plate/checkered brick of Bartz in order to improve durability and prevent the problems associated with screens in high temperature service such as warping.

Furthermore, Luinstra teaches a cylindrical reaction vessel in which a catalyst is place, but does not teach a mantle-side fill opening disposed between the gas-permeable checker bricks for introducing the catalyst bed.

Crothers also discloses a cylindrical reaction vessel in which a catalyst is placed (see abstract and Fig. 1).

Crothers teaches a mantle side fill opening (30) which is place in the shell in order to facilitate catalyst removal and replacement (col. 6 lines 14-19).

As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the mantle side fill opening of Crothers to the apparatus modified Luinstra between the checker bricks in order to facilitate removal and replacement of the catalyst.

Regarding claim 2, Luinstra further discloses the inflow opening (3) and the gas outlet (7) are disposed on opposite faces of the boiler (see Fig. 1).

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luinstra (GB 2221853 A) in view of Bartz et al. (US 5,494,003) and Crothers (US 5,169,604) as applied to claim 1 above, and further in view of Wunderlich et al. (US 3,822,337).

Regarding claims 4 and 5, Luinstra teaches a fission reactor for a Claus plant, but fails to teach:

wherein on the circumference of the outflow-side chamber, a branch line lined with refractory material is connected, which opens into a process gas line adjacent to the boiler, in the opening region of the branch line, a valve body is disposed in adjustable

manner, with which the amount flow of a hot gas stream that exits from the branch line can be regulated, and a cooler process gas passes through the process gas line, which cools the valve body and a setting device assigned to the valve body, and

wherein a waste heat boiler (4) is connected with the gas outlet (13), in which the hot process gas that exits from the boiler (9) is cooled for the condensation of elemental sulfur, and steam is generated, and wherein the branch line (16) opens into a process gas line (17) that is connected with the waste heat boiler (4) and passes the cooled process gas to a catalyst stage (5) of the Claus plant.

Wunderlich also discloses a fission reactor for a Claus plant (see abstract).

Wunderlich teaches a branch line (52) lined out from an outflow size of the discharge chamber (203a) and joins in with a process stream (at 215), with a valve body (54) where the amount of hot gas can be regulated and the cooler process gas passes through the process gas line (after a waste heat boiler 212) which generates steam, and passes the cooled process gas to a catalyst stage (Claus oven). Wunderlich teaches this configuration in order to control the temperature of the process gas stream to make it suitable for the downstream Claus reaction processes (col. 7 lines 53-56 and col. 8 lines 72-75).

As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the branch line, valve and the waste heat boiler of Wunderlich to the fission reaction apparatus of modified Luinstra in order to control the temperature of the process gas stream to make it suitable for the downstream Claus reaction processes.

Response to Arguments

6. Applicant's arguments filed 3/26/09 have been fully considered but they are moot in view of the new grounds of rejection necessitated by amendment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. MERKLING whose telephone number is (571)272-9813. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. M./
Examiner, Art Unit 1795

/Alexa D. Neckel/
Supervisory Patent Examiner, Art Unit 1795